(figs. 14 & 16). In all the others figured the tongue-spots are quite constant both in shape and distribution, being clearly defined and of a deep black colour.

EXPLANATION OF TEXT-FIGURE 33, p. 575.

Fig. 1. Tongue of *Acrocephalus phragmitis*: age about 8 days.
2. „ *A. streperus*: age about 1 or 2 days.
3. „ *Hypolais polyglotta*: age about 2 days.
4. „ *Acrocephalus palustris*: age 5 or 6 days.
5. „ *Cisticola cursitans*: age about 12 days.
6. „ *Locustella nævia*: age about 11 days.
7. „ *Sylvia cinerea*: age 5 days.
8. „ *S. atricapilla*: age about 6 days.
9. „ *S. hortensis*: age about 13 or 14 days.
10. „ *S. orphea*: age about 6 days.
11. „ *S. melanocephala*: age about 7 days.
12. „ *Alauda arborea*: age about 2 days.
13. „ *A. arvensis*: age about 6 days.
14. „ *Motacilla raii*: age about 12 days.
15*a*. „ *Accentor modularis*: age about 11 days.
15*b*. „ *A. modularis*: age about 6 days.
16. „ *Motacilla lugubris*: age about 11 days.

N.B.—The figures have been enlarged in order to shew the markings more clearly.

XXXIII.—*On the Birds procured by Mr. W. N. McMillan's Expedition to the Sobat and Baro Rivers.*

By W. R. Ogilvie-Grant.

This report is based on a large collection of birds made for Mr. W. N. McMillan during his expedition to the Sobat and Baro Rivers in the Anglo-Egyptian Sudan. A selection of these birds, which were collected by Mr. P. Zaphiro, was presented by Mr. McMillan to the British Museum. Though the collection contains examples of a large number of species, few of them are of any special interest, but nevertheless they are worthy of record, chiefly on account of the locality, whence but few specimens have been procured.

One small Waxbill (*Estrilda macmillani*) has been described as new from this collection.

To save repetition, the titles of the principal works quoted in this paper have been abbreviated as follows :—

Capt. Shelley's 'Birds of Africa' (1896-1906, incomplete) is referred to as "Shelley."

Dr. Reichenow's 'Die Vögel Afrikas' (1900–1905) is quoted as "Reich."

Messrs. Ogilvie-Grant and Reid's article ('Ibis,' 1901, pp. 607–699, pl. xiii.) is quoted as "Grant & Reid."

Mr. Ogilvie-Grant's paper "On a Collection of Birds made on the White Nile between Khartum and Fashoda" ('Ibis,' 1902, pp. 393–470, pls. x. & xi.) is quoted as "Grant."

Mr. Oscar Neumann's paper "Vögel von Schoa und Süd-Äthiopien," J. f. O. 1904–1906, is quoted as "Neumann."

Mr. Butler's article "Ornithology of the Egyptian Soudan" ('Ibis,' 1905, pp. 301–401) is quoted as "Butler."

Itinerary of the Expedition.

November 11th, 1903, to January 14th, 1904. Khartum, White Nile.
January 28th. Kawa, White Nile.
January 28th, 29th. Renk, White Nile.
January 31st. Fashoda.
February 1st. Moradar, White Nile.
February 3rd. Sobat River.
February 13th to 16th. Baro River.
March 2nd to 7th. Kaig, Baro River.
March 22nd to 5th April. Polkom, Baro River.
March 23rd & 27th. Ibaga, Baro River.
March 26th, 28th, & 29th and April 2nd to 7th. Lake Tinero, Baro River.
March 25th & 26th and April 4th & 7th. Elea, Baro River.

1. Heterocorax capensis.

Heterocorax capensis (Licht.); Grant, p. 399.

Heterocorax capensis minor (Heugl.); Reich. ii. p. 633 (1903); Neumann, 1905, p. 230.

Corvus capensis Butler, p. 326.

a, b. ♂. Fashoda, January 31st.

The above-mentioned examples belong to the smaller-billed form of the African Rook, the bill measuring 2·5 inches; in the larger *H. capensis* from Cape Colony it measures

about 2·8. On examining the specimens of *Heterocorax* in the British Museum, we find that examples procured at Swellendam and Deelfontein in Cape Colony, as well as those from Zululand and Namaqualand, belong to the larger-billed form, and that specimens from Mashonaland, Damaraland, Angola, Lado, the White Nile, and Abyssinia belong to the smaller-billed *H. minor*, while those from the Transvaal appear to have the bill intermediate in size. We mention this point, as Dr. Reichenow, who recognises the two forms, limits the range of *H. minor* to North-east and East Africa, but our specimens shew that it really extends much further south. The fact is that though typical males of *H. capensis* from Cape Colony and of *H. minor* from Abyssinia seem very distinct when compared, a series of birds from intermediate districts of Africa shews that the two forms completely intergrade.

2. Corvus scapulatus.

Corvus scapulatus Daud.; Grant, p. 400; Reich. ii. p. 634 (1903); Neumann, 1905, p. 230; Butler, p. 326.

a–d. ♂ ♀. Fashoda, January 31st.

3. Lamprotornis porphyropterus.

Lamprotornis purpuropterus Rüpp.; Reich. ii. p. 710 (1903); Neumann, 1905, p. 243.

Lamprotornis porphyropterus Grant, p. 401; Butler, p. 324 (part.).

a, *b*. ♂ ♀. Kaig, March 4th & 5th.

c–g. ♂ ♀. Ibaga, March 27th.

h. ♂. Lake Tinero, March 26th.

i–m. ♂ ♀. Eleá, March 26th and April 4th.

4. Lamprotornis æneocephalus.

Lamprotornis æneocephalus Heugl.; Grant, pp. 401 & 402.

Lamprotornis porphyropterus Butler, p. 324 (part.).

a–d. ♂ ♀ et ♀ imm. Kawa, January 28th.

Although Mr. A. L. Butler was unable to recognise these two forms (*cf.* 'Ibis,' 1905, p. 324), the series of *L. æneocephalus* from the White Nile and of *L. porphyropterus*

from the Baro River in the present collection entirely confirms my former remarks (*cf.* 'Ibis,' 1902, pp. 401–402) as regards the comparative size, length of tail, and geographical distribution of these two forms.

Mr. Butler writes :—"One of my Roseires skins (a male) has the central rectrices 7·8 inches long, *i. e.* well within the dimensions given for *L. œneocephalus*. But near El Obeid, in Kordofan, I saw some birds with tails so very much longer—undoubtedly the true *L. œneocephalus*—that I hesitate to ascribe my Blue or White Nile birds to the same form, and should call them *L. porphyropterus*."

In reply to this statement, we can only point out the danger of conclusions based on specimens which have *merely been seen* at a distance. Mr. Butler's bird from Roseires is undoubtedly *L. œneocephalus*, and he has evidently never examined specimens of *L. porphyropterus*.

The bird from Kordofan with the tail of 11 inches is with little doubt referable to the West African *L. caudatus*.

The measurements of the tails of specimens in the present collection are as follows :—

L. porphyropterus.

	Males.	Females.
	in.	in.
Kaig	5·6	4·85
Ibaga.....	5·8	5·25
Lake Tinero .	5·7	
Elea	5·85	5·2
„	6·0	

L. œneocephalus.

	Males.	Females.
	in.	in.
Kawa	8·3	7·4
„	8·0	

5. Dilophus carunculatus.

Dilophus carunculatus (Gmel.) ; Grant, Ibis, 1900, p. 121.

Perissornis carunculatus, Reich. ii. p. 670 (1903) ; Neumann, 1905, p. 237.

a. ♂ imm. Kaig, March 6th.

6. Dicrurus afer.

Buchanga assimilis (Bechst.) ; Grant, p. 402.

Dicrurus afer (Licht.) ; Reich. ii. p. 646 (1903).

Dicrurus afer lugubris H. & E. ; Neumann, 1905, p. 232.

a–g. ♂ ♀ et ♀ imm. Moradar, February 1st.

7. Oriolus galbula.

Oriolus galbula Linn.; Sharpe, Cat. Birds B. M. iii. p. 191 (1877); Butler, p. 323.

Oriolus oriolus (Linn.); Reich. ii. p. 654 (1903).

a. ♀. Elca, April 7th.

8. Pyromelana franciscana.

Pyromelana franciscana (Isert); Grant, p. 404; Reich. iii. p. 122 (1904); Shelley, iv. p. 90 (1905); Butler, p. 318.

Pyromelana franciscana franciscana Neumann, 1905, p. 345.

a–g. ♂. Khartum, 31st December, January 4th–14th.

9. Quelea æthiopica.

Quelea æthiopica (Sundev.); Grant, p. 404; Butler, p. 319; Shelley, iv. p. 114 (1905).

Quelea sanguinirostris æthiopica, Reich. iii. p. 109 (1904); Neumann, 1905, p. 343.

a. ♀. Moradar, February 1st.

According to Mr. J. A. Bucknill, the South African form of this species is almost certainly parasitic and deposits its eggs in nests of *Pyromelana orya*. He believes that the eggs laid by these two species are indistinguishable. Mr. Ayres, of Potchefstroom, confirms these statements.

10. Steganura paradisea.

Steganura paradisea (Linn.); Grant, p. 403; Reich. iii. p. 223 (1904); Butler, p. 317.

Vidua paradisea Shelley, iv. p. 25 (1905).

a. ♂. Kawa, January 28th.

11. Vidua principalis.

Vidua principalis (Linn.); Grant & Reid, p. 613.

Vidua serena (Linn.); Reich. iii. p. 217 (1904); Butler, p. 317; Shelley, iv. p. 16 (1905); Neumann, 1905, p. 352.

a. ♀. Kawa, January 28th.

b. ♂. Moradar, February 1st.

12. Sporæginthus subflavus.

Sporæginthus subflavus (Vieill.); Grant, p. 405.

Estrilda subflava Reich. iii. p. 186 (1904); Shelley, iv. p. 207 (1905).

a. ♂. Moradar, February 1st.

The example of the Sanguineous Waxbill procured by Mr. Zaphiro, apparently an unusually fine bird, has the breast and belly scarlet and of a much more intense colour than in any of the specimens in the British Museum. In these latter the under parts are largely mixed with orange.

13. Sporæginthus ochrogaster.

Estrilda ochrogaster Salvad.; Reich. iii. p. 185 (1904); Shelley, iv. p. 217 (1905).

a. ♂ imm. Baro River, February 14th.

This bird is slightly smaller (wing 1·9 inches) than the specimens of *S. ochrogaster* in the British Museum; the ear-coverts are yellowish buff, the breast paler, and all trace of pink on the lower abdomen is wanting. No doubt the present specimen is a bird in the immature plumage.

The occurrence of this species on the Baro River extends its known range considerably to the south and west. It was first recorded from Tigré and subsequently from Lake Tsana (*Degen*) and Gelongol (*Lovat*).

14. Amadina fasciata.

Amadina fasciata (Gmel.); Grant & Reid, p. 617; Reich. iii. p. 146 (1904); Shelley, iv. p. 123 (1905); Butler, p. 319.

a. ♀. Kawa, January 28th.

15. Estrilda macmillani Grant.

Estrilda macmillani Grant, Bull. B. O. C. xix. p. 108 (1907).

a–c. ♂. Ibaga, March 27th. (*Types of the species.*)

The three male specimens in the present collection are somewhat paler above and a little smaller than typical specimens of *E. occidentalis* Fras. & Jard., from Fernando Po; they are also distinctly paler and smaller than examples

of *E. occidentalis* from Sierra Leone. The differences, though slight, seem to warrant their separation. The following is a comparative list of measurements :—

E. macmillani, Grant.		*E. occidentalis* Fras. & Jard.			
Ibaga, Baro River.		Fernando Po.		Sierra Leone.	
Wing.	Tail.	Wing.	Tail.	Wing.	Tail.
in.	in.	in.	in.	in.	in.
♂. 1·77	1·6	♂. 1·85	1·8 (imperf.)	♂. 1·83	1·8
♂. 1·75	1·6	♂. 1·85	1·75 (imperf.)	♂. 1·82	1·8
♂. 1·75	1·6			♂. 1·85	1·87

Estrilda peasei Shelley appears to be a well-defined form, and is easily recognised from *E. occidentalis* Fraser by its much pinker breast and larger size, though Capt. Shelley [B. of Africa, iv. p. 200 (1905)] has subsequently united it to the West-African form.

16. Estrilda bengalus.

Estrilda phœnicotis Swains.; Grant, p. 406; Butler, p. 319.

Uræginthus bengalus (Linn.); Reich. iii. p. 207 (1904); Shelley, iv. p. 186 (1905).

Uræginthus bengalus perpallidus Neumann, 1905, p. 351.

a. ♀. Renk, January 29th.

b. ♂. Moradar, February 1st.

17. Sitagra luteola.

Sitagra luteola (Licht.); Grant, p. 406; Shelley, iv. p. 397 (1905).

Ploceus luteolus Reich. iii. p. 76 (1904); Neumann, 1905, p. 341.

a–c. ♂ ♀. Moradar, February 1st.

The male bird is in winter plumage.

18. Hyphantornis tæniopterus.

Hyphantornis tæniopterus (Reichenb.); Grant, p. 406; Shelley, iv. p. 411 (1905); Butler, p. 323.

Ploceus tæniopterus Reich. iii. p. 82 (1904); Neumann, 1905, p. 341.

a, *b*. ♂. Kaig, March 4th & 5th.

Both these birds are in winter plumage.

19. Passer rufidorsalis.

Passer domesticus rufidorsalis Brehm; Reich. iii. p. 235 (1904).

Passer domesticus Shelley, iii. p. 239 (1902); Butler, p. 315.

a–g. ♂ ♀. Khartum, Dec. 21st and January 2nd to 6th.

This form appears to be fairly distinct from typical *P. domesticus*, and a large series of specimens from the White Nile are quite alike as regards coloration. Captain Shelley has followed Dr. Sharpe in the 'Catalogue of Birds' and regards the present form as inseparable from *P. domesticus*, but I agree with Dr. Reichenow in thinking that it should be kept distinct.

20. Passer luteus.

Passer luteus (Licht.); Grant, p. 408; Shelley, iii. p. 258 (1902); Butler, p. 315.

Auripasser luteus Reich. iii. p. 248 (1904).

a. ♀. Khartum, January 8th.

b. ♂ imm. Kawa, January 28th.

21. Serinus leucopygius.

Serinus leucopygius (Sundev.); Grant, p. 408; Shelley, iii. p. 216 (1902); Butler, p. 316.

Poliospiza leucopygia Reich. iii. p. 255 (1904).

a. ♀. Kawa, January 28th.

b–e. ♂ ♀. Moradar, February 1st.

22. Calandrella brachydactyla.

Calandrella brachydactyla (Leisl.); Shelley, iii. p. 129 (1902); Reich. iii. p. 374 (1904); Butler, p. 308.

a–k. ♂. Khartum, December 31st to January 14th.

23. Galerida senegalensis.

Galerida cristata (Linn.); Grant, p. 410; Butler, p. 309.

Galerida senegalensis (P. L. S. Müll.); Shelley, iii. p. 108 (1902).

Galerida cristata senegallensis Reich. iii. p. 359 (1904).

a–c. ♂ ♀. Khartum, December 31st and January 2nd.

24. Pyrrhulauda melanocephala.

Pyrrhulauda melanocephala Licht. ; Grant, p. 411 ; Shelley, iii. p. 90 (1902) ; Reich. iii. p. 367 (1904) ; Butler, p. 313.

a–e. ♂ ♀. Khartum, December 31st, January 8th & 14th.

In typical examples of *P. melanocephala* from Nubia and Senegambia, and of *P. leucotis* from Abyssinia, the differences are well marked ; but in a large series of specimens of these two species procured on the Nile at Berber, Merowe, Shendi, &c. we find a somewhat intermediate stage. These birds, though most closely resembling *P. melanocephala*, also approach *P. leucotis* in certain respects, having a greater or less number of black feathers mingled with the lesser wing-coverts and forming a more or less marked patch of black on the shoulder. These black feathers are entirely absent in the true *P. melanocephala*. With one exception, which shews a trace of black feathers among the wing-coverts, all the birds from Khartum in the British Museum appear to be typical *P. melanocephala*.

The Museum possesses typical examples of *P. leucotis* from Upper Gallaland, Fashoda, the White Nile, and from Equatorial Africa.

No doubt all the birds procured by Mr. Butler at Khartum and Kawa belong to the present species, while those from Gedaref should be referred to *P. leucotis*.

25. Motacilla alba.

Motacilla alba Linn. ; Reich. iii. p. 299 (1904) ; Butler, p. 304.

a–d. ♂. Khartum, December 30th to January 1st.

26. Motacilla flava.

Motacilla flava Linn. ; Grant, p. 411 ; Butler, p. 305.

Budytes flavus Reich. iii. p. 303 (1904) ; Neumann, 1906, p. 230.

a, b. ♂. Khartum, January 1st & 2nd.

c. ♂. Moradar, February 1st.

d, e. ♂. Baro River, February 16th.

These specimens are all immature birds attaining their

first summer plumage. The bird from Khartum has a yellowish eyebrow-stripe, which is characteristic of *M. campestris*, but nevertheless it appears to be an immature specimen of *M. flava*. There is an adult example of the latter species in summer plumage in the British Museum, which has the eyebrow-stripe yellowish posteriorly.

27. Anthus cervinus.

Anthus cervinus (Pallas); Grant, p. 412; Reich. iii. p. 311 (1904); Butler, p. 306; Neumann, 1906, p. 230.

a, b. ♂. Khartum, January 1st & 8th.

28. Anthus cinnamomeus.

Anthus rufulus (nec Vieill.); Shelley, ii. p. 319 (1900); Grant & Reid, p. 633.

Anthus rufulus cinnamomeus Rüpp.; Reich. iii. p. 313 (1904); Neumann, 1906, p. 231.

a–f. ♂ ♀. Baro River, February 13th to 16th.

g. ♀. Kaig, March 7th.

Dr. Reichenow separates African examples of this species from typical Indian specimens on account of their somewhat larger size. After measuring a number of specimens in the British Museum I think it best to accept the name *A. cinnamomeus* for the African bird.

He gives the following comparative measurements:—

	A. cinnamomeus.	*A. rufulus.*
Wing.....	80–90 mm.	76–82 mm.
Tail	60–72 mm.	56–62 mm.

Specimens from the Baro River measure: wing 89–94, tail 68–75 mm.

29. Nectarinia pulchella.

Nectarinia pulchella (Linn.); Grant, p. 614; Reich. iii. p. 497 (1905); Butler, p. 303; Neumann, 1906, p. 256.

a. ♂ imm. Renk, January 28th.

b. ♀. Ibaga, March 27th.

c–f. ♂ ad. et ♂ imm. Elea, March 26th and April 4th to 6th.

g–k. ♂ ad. et imm. Polkom, March 23rd and April 5th.

l–n. ♂. Lake Tinero, March 28th and April 4th & 5th.

30. Nectarinia metallica.

Nectarinia metallica, Licht.; Grant, p. 413; Butler, p. 302.

Hedydipna metallica Reich. iii. p. 493 (1905).

a. ♂. Khartum, January 11th.

31. Parus leucomelas.

Parus leucomelas Rüpp.; Butler, p. 304.

Parus niger leucomelas Reich. iii. p. 511 (1905); Neumann, 1906, p. 260.

a. ♂. Polkom, March 24th.

b, *c*. ♂. Lake Tinero, March 28th.

The wings in these three specimens measure respectively: 78, 78, and 79 mm.

Mr. Neumann has described a somewhat larger form from the Omo River, &c., as *Parus niger lacuum*.

32. Pomatorhynchus habessinicus.

Telephonus blanfordi (Sharpe); Grant & Reid, p. 637.

Pomatorhynchus senegalus habessinicus (Hempr. & Ehr.); Neumann, 1905, p. 220.

a. ♂. Polkom, March 23rd.

b, *c*. ♂. Elea, March 25th & 26th.

d, *e*. ♂. Lake Tinero, April 5th.

Mr. Neumann has pointed out that the name *P. habessinicus* should be used for the bird commonly known as *P. blanfordi* (Sharpe). Whether the present form is really distinct from *P. senegalus* appears to be extremely doubtful, as none of the characters by which it is said to be distinguished appear to be constant. On the other hand, the perfectly distinct form *P. percivali* (Grant) from Arabia has been added to the synonymy of the present species by Dr. Reichenow [*cf.* Vög. Afr. ii. p. 550 (1903)].

33. Dryoscopus malzacii.

Dryoscopus malzaci (Heugl.); Grant & Reid, p. 638.

Dryoscopus cinerascens Hartl.; Reich. ii. p. 596, iii. p. 834 (1903).

Dryoscopus malzakii erythreæ Neumann, 1905, p. 223.

a–c. ♂ ♀. Elea, March 25th and April 4th.

d–l. ♂ ♀ et ♂ imm. Lake Tinero, March 28th, April 5th & 6th.

34. Laniarius similis.

Laniarius sulphureipectus (Less.); Grant & Reid, p. 639.

Chlorophoneus sulfureopectus chrysogaster (Swains.); Reich. ii. p. 562 (1903).

Chlorophoneus sulfureopectus similis (Smith); Reich. ii. p. 563 (1903).

Chlorophoneus sulfureopectus suahelicus Neumann, 1905, p. 221.

a. ♀. Lake Tinero, 5th April.

Dr. Reichenow (*op. cit.*) recognises four subspecies of *L. sulphureipectus*. I have carefully examined the series in the British Museum, in which all but the Angola form (*L. modestus* Bocage) are well represented. Of this latter there is only one specimen. The typical form from West Africa with its wide yellow forehead and marked yellow eyebrow-stripe seems to be fairly separable from *L. chrysogaster* (Swains.), which is said to range from Senegambia to Abyssinia and thence southwards to Lake Nyasa. To this form the present specimen must be referred. I cannot, however, distinguish *L. chrysogaster* from the South-African *L. similis* Smith, adult birds from Abyssinia being indistinguishable from those from the Cape. Mr. Neumann's remarks on this subject are not borne out by the specimens before me.

35. Laniarius erythrogaster.

Laniarius erythrogaster Cretzschm.; Grant, p. 414; Reich. ii. p. 586 (1903); Butler, p. 329; Neumann, 1905, p. 223.

a. ♀. Kawa, January 28th.

b. ♀. Renk, January 29th.

c. ♂. Sobat River, February 3rd.

d–p. ♂ ♀. Kaig, March 2nd & 5th.

q, r. ♂ et ♀ imm. Polkom, March 22nd.

The females from Kawa and Renk are somewhat larger

than the birds from the Sobat and Baro Rivers, the wings of the two former measuring respectively 4·1 and 4·2 inches, while in the latter they vary from 3·6 to 3·9. In other respects they do not appear to differ. One immature specimen in the British Museum from Goz-abu-Gumar, White Nile, has some of the feathers of the crown mixed with cinnamon, much as in the young of *L. barbarus*; this apparently indicates a reverting of the present black-headed species to a cinnamon-headed ancestral type. Two other immature birds from the Baro River have the crown quite black.

36. Nilaus afer.

Nilaus afer (Lath.); Grant, p. 414; Reich. ii. p. 539 (1903); Butler, p. 329.

a. ♂. Renk, January 29th.

b. ♂. Polkom, March 22nd.

37. Lanius assimilis.

Lanius assimilis Brehm; Grant, Nov. Zool. ix. p. 459, pl. xxvii. fig. 10 (1902); Reich. ii. p. 619 (1903).

a. ♂. Khartum, January 11th.

This example can only be referred to the present form; though apparently adult it differs from the majority of specimens in that the narrow black band at the base of the culmen is almost entirely wanting.

38. Lanius excubitorius.

Lanius excubitorius Des Murs; Grant, p. 415; id. Nov. Zool. ix. p. 469 (1902); Reich. p. 615 (1903).

Fiscus excubitorius Butler, p. 327.

Lanius excubitorius excubitorius Neumann, 1905, p. 227.

a. ♂. Moradar, February 1st.

39. Lanius intercedens Neumann.

Lanius excubitorius intercedens Neumann, 1905, p. 228.

a–f. ♂ ♀. Lake Tinero, March 28th to April 7th.

Finding that the bird procured by M. Zaphiro on the White Nile differed slightly from others which he had collected on the Baro River, both in colour and in size, I have re-examined all the material available for comparison.

Dr. Reichenow recognises *L. excubitorius* and *L. boehmi* as distinct species. Mr. Neumann, on the other hand, regards the latter as a subspecies of *L. excubitorius* and separates the birds found from the Hawash Valley southwards to Lake Victoria under the name of *L. e. intercedens*. I quite agree in recognising *L. intercedens* as a fairly well-marked form, but Mr. Neumann also states that it is intermediate in *size* between *L. excubitorius* and *L. boehmi* and gives the following measurements :—

	L. e. excubitorius.	*L. e. intercedens.*	*L. e. boehmi.*
	mm.	mm.	mm.
Wing.....	105–116	116–124	124–130

But after measuring the dimensions of a large series I find that *L. intercedens* (with the wing 105–113 mm.) is the smallest form ; *L. excubitorius* (with the wing 109–127 mm.) is intermediate ; and *L. boehmi* (with the wing 125–127) is the largest of the three. It should also be noted that typical examples of *L. excubitorius* from Abyssinia are appreciably larger than those from the White Nile and from further south.

40. Lanius rufus.

Lanius paradoxus Brehm ; Grant, p. 415 ; Butler, p. 328.

Lanius rufus (Gmel.) ; Grant, Nov. Zool. ix. p. 465 (1902).

Lanius senator Linn. ; Reich. ii. p. 625 (1903).

a, b. ♂. Moradar, February 1st.

41. Lanius isabellinus.

Lanius isabellinus Hempr. & Ehr. ; Grant, p. 415 ; id. Nov. Zool. ix. p. 482 (1902) ; Reich. ii. p. 624 (1903).

a. ♀. Renk, 29th January.

b–e. ♂. Lake Tinero, April 2nd & 4th.

42. Lanius nubicus.

Lanius nubicus Licht. ; Grant, p. 416 ; id. Nov. Zool. ix. p. 464 (1902) ; Reich. ii. p. 612 (1903) ; Butler, p. 328.

a–d. ♂ ♀ ad. et imm. Renk, January 29th.

43. Melænornis pammelæna.

Sylvia pammelaina Stanley, in Salt's Abyssinia, App. p. 59 (1814); Neumann, 1905, p. 205.

a. ♂. Elea, April 6th.

This is a typical example of *M. pammelæna* and appears to be perfectly distinct from *M. schistacea* Sharpe, with which it has been united by Dr. Reichenow [*cf.* Vög. Afr. ii. p. 441 (1903)].

44. Bradyornis pallidus.

Bradyornis pallidus (Müll.); Grant, p. 416; Reich. ii. p. 435 (1903); Butler, p. 340; Neumann, 1905, p. 204.

a. ♂. Moradar, February 1st.

This bird belongs to the smaller race of *B. pallidus* (*B. subalaris* Sharpe): wing 3·3 inches, tail 2·7.

45. Bradyornis, sp. inc.

a, *b*. ♂ ♀. Ibaga, March 27th.

Two birds from Ibaga, on the Baro River, appear to represent a form distinct from the typical *B. pallidus*; they are distinguished by their smaller size, darker earthy-brown upper parts, and more strongly coloured under parts, the chest, sides of the breast, and flanks being suffused with tawny-buff, while the basal part of the lower mandible is of a pale whitish horn-colour. The measurements are as follows:—

Male: wing 3·15 inches; tail 2·7.

Female: wing 3·0 inches; tail 2·65.

Without additional material I do not feel justified in adding another name to this already difficult genus.

46. Phylloscopus rufus.

Phylloscopus rufus (Bechst.); Grant, p. 416; Butler, p. 335; Reich. iii. p. 643 (1905).

a. ♂. Khartum, January 4th.

47. Sylvia curruca.

Sylvia curruca (Linn.); Grant, p. 416; Butler, p. 336; Reich. iii. p. 654 (1905).

a, *b*. ♂. Khartum, January 11th & 12th.

48. Hypolais pallida.

Hypolais pallida (Hempr. & Ehr.); Grant, p. 417; Butler, p. 334.

Hippolais pallida Reich. iii. p. 646 (1905).

a–c. ♂ ♀. Khartum, January 10th & 11th.

d–f. ♂. Renk, January 29th.

49. Sylviella brachyura.

Sylviella brachyura Lafr.; Grant, Ibis, 1900, pp. 155, 156, & p. 417; Alexander, Ibis, 1902, p. 320; Butler, p. 331.

Sylvietta micrura Reich. (nec Rüpp.) iii. p. 627 (1905).

Sylvietta brachyura nilotica Neumann, 1906, p. 279.

a. ♂. Renk, January 29th.

b. ♂. Kaig, March 5th.

Dr. Reichenow (Vög. Afr. iii. pp. 627, 629) has altered the names of the two species which have been recognised by me (*cf.* 'Ibis,' 1900, pp. 154–157) as *S. micrura* Rüpp. and *S. brachyura* Lafr.; the former he calls *S. leucopsis* (Reich.), the latter *S. micrura* Rüpp. I have again gone closely into the question and am still convinced that the white eyebrowed white-throated bird, the *S. leucopsis* (Reich.), is also *S. micrura* Rüpp. Rüppell's figure and description of the bird clearly shew that the eyebrow-stripe and throat are *white*, and this appears to me to settle the question.

According to Dr. Reichenow, *S. brachyura* is confined to West Africa, but, as has already been pointed out, examples from the Gold Coast differ in no way from Abyssinian specimens, and Bonaparte states that Lafresnaye's type was procured in "Sennaar" and not in Senegambia.

Dr. Reichenow, who has examined Rüppell's types of *S. micrura* in Frankfurt, states that two forms are mixed up under that name, but, as already stated, Rüppell's description and figure leave no room for doubt as to which bird he referred to, though he was certainly wrong in giving Kordofan as the locality where the species was found. The rufous-eyebrowed and rufous-throated bird must therefore stand as *S. brachyura* Lafr. and not as *S. micrura*, *S. leucopsis* (Reich.) being a synonym of the latter.

50. Prinia murina.

Prinia murina (Heugl.); Grant, p. 419; Butler, p. 332.

Prinia mystacea Rüpp.; Reich. iii. p. 590 (1905); Neumann, 1906, p. 276.

a. ♂. Renk, January 28th.

b. ♂. Moradar, February 1st.

c–e. ♂ ♀. Baro River, February 14th & 16th.

51. Melocichla mentalis.

a–c. ♂ ♀. Kaig, March 4th & 6th.

The three specimens collected for Mr. McMillan on the Baro River have the feathers of the rump pale cinnamon-buff, in marked contrast to the upper tail-coverts, which are dark chestnut-brown. One specimen in the British Museum from Accra and three in the Jackson Collection from Mt. Elgon are perfectly similar in plumage to the birds from Kaig. On the other hand, the type specimen of *M. mentalis* and other examples from Accra, Fantee, &c., have the feathers of the rump reddish brown, much like the upper tail-coverts. I am at present unable to account for this rather marked difference in plumage, but as it is extremely unlikely that two distinct forms occur together in the same locality, I have merely called attention to these differences.

Dr. Reichenow [Vög. Afr. iii. pp. 538, 539 (1905)] distinguishes three subspecies of *M. mentalis*, viz.: the typical form from West Africa; *M. m. atricauda* from Equatorial Africa and Uganda; and *M. m. orientalis*, ranging from Lake Victoria to Lake Nyasa.

I have carefully re-examined the large series of these birds now available, including a number collected by the Ruwenzori Expedition. I find it impossible to recognise more than two forms, which should probably stand as follows:—

(1) Melocichla mentalis.

Drymoica mentalis Fraser, P. Z. S. 1843, p. 16 (type in the British Museum).

Argya amauroura Pelz. Verh. zool.-bot. Ges. Wien, xxxii. p. 503 (1882).

Melocichla atricauda Reich. Orn. Monatsb. 1893. p. 61.
Melocichla mentalis Reich. iii. p. 538 (1905).
Melocichla mentalis atricauda Reich. l. c. p. 539.
Melocichla mentalis amaurocra Neumann, 1906, p. 263.

The typical form, which ranges from West Africa to the White Nile and Uganda, has the upper parts much darker brown than *M. orientalis* and the rump usually reddish brown and much like the upper tail-coverts. As remarked above, the Kaig specimens, &c., with the pale cinnamon-buff rump are different, but, for reasons already given, are not separated.

(2) Melocichla orientalis.

Cisticola orientalis Sharpe, Cat. Birds B. M. vii. p. 215 (1883) (type in the British Museum).
Melocichla mentalis orientalis Reich. iii. p. 538 (1905).

The eastern form, which ranges from the Pangani River to Lake Nyasa, has the upper parts of an altogether lighter brown than typical *M. mentalis*, and the feathers of the rump are lighter rufous-brown, while the bill is distinctly stouter and longer.

52. Cossypha verticalis.

Cossypha verticalis Hartl.; Sharpe, P. Z. S. 1901, p. 613; Reich. iii. p. 761 (1905); Neumann, 1906, p. 282.

a. ♀. Kaig, March 4th.
b–d. ♂ ♀. Lake Tinero, March 28th, April 4th.

An example of this species was procured at Fort Berkeley, on the Upper White Nile, by Dr. Donaldson Smith.

53. Turdus pelios.

Turdus pelios Bonap.; Grant, Ibis, 1904, p. 268; Reich. iii. p. 690 (1905); Butler, p. 337.
Turdus libonyanus pelios Neumann, 1906, p. 285.

a. ♂. Polkom, April 5th.
b, c. ♂ ♀. Elea, March 26th.
d–g. ♂ ♀. Lake Tinero, March 26th, April 2nd & 4th.

54. Pratincola maura.

Pratincola maura (Pall.); Grant, Ibis, 1904, p. 269; Reich. iii. p. 734 (1905).

Pratincola rubicola (Linn.); Butler, p. 336.

Pratincola rubicola maura Neumann, 1906, p. 295.

a. ♂. Baro River, February 16th.

Rather more than the basal half of the four outer pairs of tail-feathers is white on the inner web; the basal third of the third to the fifth pairs is also white on the outer web. This specimen may be regarded as typical of *P. hemprichi*, which should perhaps be separated from *P. maura*.

55. Saxicola œnanthe.

Saxicola œnanthe (Linn.); Grant, p. 421; Butler, p. 338; Reich. iii. p. 723 (1905).

a. ♀. Moradar, February 1st.

c–e. ♂. Baro River, February 13th & 15th.

f. ♂. Kaig, March 7th.

g. ♂. Polkom, March 24th.

h. ♂. Lake Tinero, March 28th.

56. Saxicola deserti.

Saxicola deserti (Temm.); Grant, p. 421; Butler, p. 339; Reich. iii. p. 726 (1905).

a–f. ♂ ♀. Khartum, December 21st, January 4th & 8th.

57. Saxicola heuglini.

Saxicola heuglini Finsch & Hartl.; Grant, p. 421; Butler, p. 339; Reich. iii. p. 720 (1905).

a–i. ♂ ♀. Baro River, February 16th.

Nine additional examples of Heuglin's Chat from the Baro River bear out our previous remarks (*l. c.*) on this species.

58. Cercotrichas podobe.

Cercotrichas podobe (Müll.); Grant, p. 422; Reich. iii. p. 763 (1905).

a. ♂. Khartum, January 11th.

59. Crateropus leucocephalus.

Crateropus leucocephalus (Cretzschm.); Grant, p. 422; Reich. iii. p. 666 (1905).

a. ♂. Kawa, January 28th.

60. Crateropus cinereus.

Crateropus plebeius cinereus Heugl.; Reich. iii. p. 658 (1905); Neumann, 1906, p. 263.

a–i. ♂ ♀. Lake Tinero, March 28th, April 4th & 5th.

This form is barely distinguishable from *C. plebeius*; it is perhaps a trifle smaller and has the lower back and rump more distinctly washed with grey.

61. Pycnonotus arsinoe.

Pycnonotus arsinoe (Hempr. & Ehr.); Grant, p. 423; Reich. iii. p. 420 (1905).

a, b. ♂ ♀. Kaig, March 4th & 11th.

62. Campophaga phœnicea.

Campophaga phœnicea (Lath.); Grant, Ibis, 1900, p. 172.

Campephaga phœnicea Reich. ii. p. 521 (1903); Neumann, 1905, p. 214.

a–d. ♂. Lake Tinero, March 29th to April 6th.

e, f. ♂ ♀. Elea, April 4th & 7th.

It is worthy of note that specimens of this species from Senafé, Tigré, and South Abyssinia differ from West-African examples and from those found on the Baro River in having the shoulder-spot of a more orange-red. The males from the Baro River appear to be rather small, the wing measuring from 3·6 to 3·8 inches; the female, on the contrary, is abnormally large with a wing measuring 4·05 inches.

63. Batis orientalis.

Batis orientalis (Heugl.); Grant, p. 423; Reich. ii. p. 481 (1903); Butler, p. 341.

Batis senegalensis orientalis Neumann, 1905, p. 209.

a. ♀. Moradar, February 1st.

b, c. ♂ ♀. Kaig, March 4th & 7th.

d. [♂]. Elea, March 25th.

e, f. ♂ ♀. Lake Tinero, March 26th to 28th.

64. Terpsiphone viridis.

Terpsiphone cristata (Gmel.); Grant, p. 423.

Tchitrea viridis Müll.; Reich. ii. p. 504 (1903).

Tchitrea viridis ferreti Guér.; Neumann, 1905, p. 211.

a–k. ♂ ♀ et imm. Kaig, March 2nd to 7th.

l, m. ♂ juv. et ♀. Polkom, March 22nd & 24th.

n–p. ♂ et imm. Lake Tinero, March 26th.

The series includes examples in various stages of plumage, some of the males being in the black-and-white garb of the fully adult bird and others in partially chestnut plumage.

65. Empidornis semipartitus.

Empidornis semipartitus (Rüpp.); Reich. ii. p. 447 (1903).

a, b. ♂ ♀. Moradar, February 1st.

c–f. ♂ ♀. Lake Tinero, March 26th & 29th, April 2nd.

66. Cotile riparia.

Cotyle riparia (Linn.); Grant, p. 424; Butler, p. 343.

Riparia riparia Reich. ii. p. 393 (1903).

a, b. ♂. Baro River, February 12th & 13th.

67. Hirundo æthiopica.

Hirundo æthiopica Blanf.; Grant, p. 424; Reich. ii. p. 406 (1903); Butler, p. 341.

a–n. ♂ ♀. Khartum, January 6th to 12th.

68. Hirundo domicella.

Hirundo domicella Finsch & Hartl.; Sharpe, Monogr. Hirund. ii. p. 381, pl. 70 (1885); Reich. ii. p. 420 (1903).

a. ♀. Baro River, February 13th.

b. ♀. Elea, April 7th.

c, d. ♂ et ♀ imm. Lake Tinero, April 7th.

69. Mesopicus pœocephalus.

Mesopicus pœocephalus (Swains.); Grant, p. 425.

Mesopicos goertæ poicephalus Reich. ii. p. 186 (1902).

Mesopicos goertæ abessinicus Reich. ii. p. 187 (1902).

Mesopicos goertæ centralis Reich. ii. p. 187 (1902).

Mesopicos goertæ abyssinicus Neumann, 1904, p. 396.

a. ♀. Polkom, April 5th.

b–d. ♂ ♀. Kaig, March 4th.

70. Campothera nubica.

Campothera nubica (Gmel.); Grant, p. 426; Butler, p. 358.

Dendromus nubicus Reich. ii. p. 178 (1902); Neumann, 1904, p. 394.

a, b. ♀. Lake Tinero, April 6th & 7th.

Specimen *a* is labelled as a male, but a mistake has obviously been made in ascertaining the sex.

71. Dendropicus simoni.

Dendropicus simoni Grant, Ibis, 1900, p. 304.

Dendropicos lafresnayi Reich. (nec Malh.) ii. p. 195 (1902) [part.].

Dendropicos guineensis lepidus Neumann (? nec Cab. & Heine), 1904, pp. 399–401.

a, b. ♂ ♀. Lake Tinero, April 6th & 7th.

The pair of birds collected for Mr. McMillan certainly belong to the form procured by Mr. Neumann and referred by him to *D. lepidus*. The latter is described by Cabanis & Heine as having a broad postocular stripe like *D. abyssinicus*, a point which was commented on by Hargitt [*cf.* Cat. B. Brit. Mus. xviii. p. 302 (1890)], but our birds shew no trace of any such marking. On the other hand, they are undoubtedly the same as *D. simoni* Grant, the type of which was procured by Lord Lovat at Konduro, South Abyssinia. This species has been doubtfully referred by Mr. Neumann to the synonymy of *D. lepidus*, but *D. simoni* shews no trace of the wide postocular stripe said to be characteristic of the former.

72. Lybius abyssinicus.

Melanobucco abyssinicus (Lath.); Grant, Ibis, 1904, p. 273.

Lybius tridactylus (Gmel.); Reich. ii. p. 124 (1902); Neumann, 1904, p. 386.

a. ♂. Sobat River, February 3rd.

b–i. ♂ ♀. Kaig, March 2nd & 7th.

k–n. ♂ ♀. Polkom, March 22nd and April 5th.

o, p. ♂. Elea, April 4th & 6th.

q–s. ♂ ♀. Lake Tinero, April 5th.

The specimens in the present collection appear to be slightly smaller than more northern birds; the wing in eleven examples varies from 3·25 to 3·35 inches.

73. Lybius vieilloti.

Melanobucco vieilloti Leach; Grant, p. 426; Butler, p. 358.

Lybius vieilloti Reich. ii. p. 127 (1902) [part.].

a, b. ♂ ♀. Renk, January 29th.

74. Lybius æquatorialis.

Melanobucco æquatorialis Shelley; Grant, Ibis, 1904, p. 273.

Lybius æquatorialis Reich. ii. p. 119 (1902).

Lybius bidentatus æquatorialis Neumann, 1904, p. 385.

a. ♂. Polkom, April 5th.

b–d. ♂ ♀. Elea, April 6th.

e–i. ♂ ♀. Lake Tinero, March 29th, April 5th & 6th.

75. Centropus monachus.

Centropus monachus (Rüpp.); Grant, p. 428; Reich. ii. p. 62 (1902); Neumann, 1904, p. 379; Butler, p. 356.

a. ♀. Renk, January 29th.

b–e. ♂ ♀. Kaig, March 2nd & 7th.

f–h. ♀. Polkom, March 22nd to 24th.

76. Colius leucotis.

Colius leucotis (Rüpp.); Reich. ii. p. 204 (1902); Butler, p. 356; Grant, Ibis, 1904, p. 274; Sclater, Gen. Av. pt. 6, *Coliidæ*, p. 5 (1906).

Colius striatus leucotis Neumann, 1904, pp. 403–405.

a–c. ♂ ♀. Kaig, March 4th to 7th.

d, e. ♂ ♀. Polkom, March 23rd.

77. Colius macrurus.

Colius macrurus (Linn.); Grant, p. 428; Butler, p. 356; Sclater, Gen. Av. pt. 6, *Coliidæ*, p. 4 (1906).

Colius macrourus Reich. ii. p. 210 (1902).

a. ♂. Khartum, January 6th.

b, c. ♂ ♀. Kaig, March 4th & 5th.

78. Tachornis parva.

Tachornis parva (Licht.); Grant, p. 429; Reich. ii. p. 383 (1902); Butler, p. 344.

a. ♂. Khartum, January 10th.

79. Caprimulgus natalensis.

Caprimulgus natalensis Smith; Reich. ii. p. 367 (1902); Sharpe, Ibis, 1902, p. 622; Grant, Ibis, 1905, p. 203.

a. ♀. Baro River, February 15th.

This specimen, rather a brightly-coloured bird, closely resembles a male example from Natal in the British Museum, but all the black markings, especially those on the head and back, are more pronounced, more so than in any other specimen of *C. natalensis* that I have examined. The occurrence of the Natal Nightjar on the Baro River extends its known range a long way to the north. Doggett procured a specimen at Burumba, South Uganda, and there are three examples in the Jackson Collection procured near Entebbe.

80. Macrodipteryx macrodipterus.

Macrodipteryx macrodipterus (Afzel); Grant, p. 430; Reich. ii. p. 370 (1902); Butler, p. 345; Neumann, 1905, p. 199.

a–e. ♂ et ♂ imm. Polkom, March 23rd & 24th.

f, g. ♂. Lake Tinero, April 7th.

Four of the males of the Standard-winged Nightjar have their ninth primary quill fully developed; two others are young in female-like plumage, but with the plumage of the back blacker and the wing somewhat longer than in the female.

81. Scotornis climacurus.

Scotornis climacurus (Vieill.); Grant, p. 429; Reich. ii. p. 368 (1902); Butler, p. 347; Neumann, 1905, p. 199.

a. ♀. Renk, January 29th.

b–i. ♂ ♀. Sobat River, February 3rd.

k–o. Kaig, March 2nd to 4th.

The above-mentioned specimens vary much in the ground-colour of the upper parts, some being of a dark slate-grey, others sandy brown. All but one of the birds from the

Sobat belong to the dark type ; the remaining bird from the Sobat, together with those from Renk and the Baro River, vary from the pale to the intermediate stages.

82. Lophoceros nasutus.

Lophoceros nasutus (Linn.); Grant & Reid, p. 675 ; Reich. ii. p. 257 (1902); Butler, p. 354; Neumann, 1905, p. 188.

a–c. ♂. Polkom, March 22nd to 24th.

d–f. ♂. Elea, April 6th.

83. Upupa epops.

Upupa epops Linn.; Grant, p. 432; Reich. ii. p. 333 (1902); Butler, p. 352.

a. ♂. Khartum, January 10th.

84. Irrisor erythrorhynchus.

Irrisor erythrorhynchus (Lath.); Grant, p. 433 ; id. Ibis, 1905, p. 209 ; Butler, p. 352.

Irrisor erythrorhynchos Reich. ii. p. 338 (1902) [part.].

Irrisor erythrorhynchos guineensis Reich. ii. p. 340.

Irrisor erythrorhychos niloticus Neumann, 1905, p. 194.

a–f. ♂ ♀ et imm. Polkom, March 23rd & 24th.

g, h. ♀ ad. et imm. Elea, April 6th & 7th.

85. Scoptelus notatus.

Scoptelus notatus Salvin ; Grant, p. 435 ; Butler, p. 353.

Scoptelus aterrimus Steph.; Reich. ii. p. 344 (1902) [part.].

Scoptelus aterrimus notatus Neumann, 1905, p. 196.

Scoptelus aterrimus emini and *S. a. major* Neumann, 1905, p. 197.

a. ♀ imm. Kawa, January 28th.

b. ♂. Polkom, March 24th.

c–e. ♂ ♀. Elea, April 4th & 6th.

f, g. ♂ ♀. Lake Tinero, April 5th.

As stated in my paper quoted above, the male specimen of *Scoptelus* procured by Mr. R. M. Hawker, twenty miles north of Fashoda, has the primaries entirely metallic steel-blue, without any trace of a smoky-grey subterminal patch. This is apparently characteristic of the very old male of *S. notatus* Salvin. Two males of typical *S. aterrimus*

in Mr. Boyd Alexander's Collection have these patches on the primaries nearly obsolete. This specimen shews no traces of the white spots or bands on the outer pair of tail-feathers, while in five female examples, also from the White Nile, the white markings are more or less developed and vary from a well-marked band crossing both webs to an almost invisible spot on the outer web of the outer tail-feather. Of six birds collected for Mr. McMillan on the Baro River only one male and one female shew any traces of white on the outer tail-feathers, which have a small white spot on the outer web. In the six typical Abyssinian birds in the British Museum the white band or spot is well-marked, but this character is clearly very variable and of slight importance, and I am not sure that Dr. Reichenow was not fully justified in uniting *S. notatus* with *S. aterrimus*.

Mr. Neumann has recognised no less than five forms or subspecies of *S. aterrimus*, but after a very careful examination of the series I cannot see the slightest justification for adopting such a course.

I add the wing-measurements of the specimens examined, from which it is clear that Mr. Neumann's *S. aterrimus major*, which is said to be distinguished from *S. notatus* by its size (wing 113 mm.=4·5 in.), is not much larger than many other male specimens.

Typical *S. notatus*.

	Wing. in.		Wing. in.
♂. Shoa, Abyssinia	4·2	♀. Ailat	3·9
♂. Rairo	4·2	♀. Anseba Valley	3·85
♂. Senafé	4·2		
♂. Mohaber	4·1		
♂. Polkom, Baro River	3·9	♀. Elea	3·6
♂. Elea	4·2	♀. Lake Tinero	3·85
♂. „	4·0		
♂. Lake Tinero	4·05		
♂. Twenty miles N. of Fashoda, White Nile.	4·1	♀. Kordofan	4·0
		♀. Fashoda	3·8
		♀. Kawa	3·95
		♀. Zeraf River	3·8

S. aterrimus.

	Wing. in.		Wing. in.
♂. Senegambia	4·0	♀. St. Louis, Senegambia .	5·8
♂. St. Louis	3·9	♀. „ „ .	3·7

In Mr. Boyd Alexander's Collection.

♂?. 7th July, 1906	4·25	♀. R. C. Mission, 8th November, 1905	3·85
[♂.] R. Guruba, 25th May, 1906.....	4·15		

86. Melittophagus pusillus.

Melittophagus pusillus P. L. S. Müller; Grant, p. 430; Reich. ii. p. 305 (1902); Butler, p. 349.

Melittophagus pusillus ocularis Reich. ii. p. 306 (1902); Neumann, 1905, p. 191.

a–i. ♂ ♀. Khartum, January 5th to 12th.

k. ♂. Moradar, February 1st.

l–q. ♂ ♀. Baro River, February 13th & 16th.

r–t. ♂ ♀. Kaig, March 6th & 7th.

u–w. ♂ ♀. Lake Tinero, March 28th.

x. ♂. Polkom, April 5th.

Dr. Reichenow distinguishes the eastern form of this species under the subspecific name *ocularis*, on account of the pale blue eyebrow-stripe arising above the posterior part of the eye. This slight character, though less frequent and less marked in West-African birds, is often present, and it does not appear to me that there is sufficient difference to warrant even subspecific distinction.

87. Melittophagus frenatus.

Melittophagus bullocki Grant (nec Vieill.), Ibis, 1900, p. 313.

Melittophagus frenatus (Hartl.); Reich. ii. p. 310 (1902); Butler, p. 349.

Melittophagus bullocki frenatus Neumann, 1905, p. 191.

a–g. ♂ ♀. Elea, March 25th and April 4th.

h. ♂. Lake Tinero, April 6th.

All the specimens from the Baro River have the pale

verditer-blue feathers over the lores and bordering the black cheeks and ear-coverts fairly well-marked. The specimens collected by Lord Lovat on the Blue Nile and by Emin at Langomeri are similar and should also be referred to this form, if it is kept separate from *M. bullocki*; but the fact is that certain West-African specimens, such as an example in the British Museum procured by Moloney on the Gambia, have the cheeks and ear-coverts bordered below with bluish-green and cannot be separated from *M. frenatus*.

88. Merops viridis.

Merops viridis Linn.; Grant, p. 430; Butler, p. 351.

Merops viridissimus Swains.; Reich. ii. p. 326 (1902).

a–e. ♂ ♀. Khartum, January 7th & 11th.

f. ♂. Renk, January 21st.

g. ♂. Moradar, February 1st.

h. ♂. Polkom, April 5th.

i–n. ♂ ♀. Elea, April 4th & 7th.

o. ♂. Lake Tinero, April 6th.

The colour of the throat in the above-mentioned specimens varies from green and yellowish green to yellow.

89. Merops albicollis.

Merops albicollis Vieill.; Grant, p. 431; Butler, p. 351.

Aerops albicollis Reich. ii. p. 317 (1902); Neumann, 1905, p. 193.

a–c. ♀. Kaig, March 3rd & 4th.

d. ♀. Lake Tinero, March 27th.

90. Merops nubicus.

Merops nubicus Grant, p. 431; Reich. ii. p. 329 (1902); Butler, p. 352; Neumann, 1905, p. 193.

a, b. ♂ ♀. Renk, January 29th.

c–o. ♂ ♀. Elea, March 26th and April 7th.

p–s. ♂ ♀. Lake Tinero, 6th April.

91. Dicrocercus furcatus.

Dicrocercus furcatus (Stanl.); Sharpe, Cat. Birds B. M. xvii. p. 42 (1892); Reich. ii. p. 316 (1902).

Dicrocercus hirundineus furcatus Neumann, 1905, p. 192
a–c. ♂ ♀. Polkom, March 23rd and April 5th.
d–g. ♂ ♀. Elea, April 4th & 7th.
h, i. Lake Tinero, March 29th & April 5th.

92. Coracias abyssinicus.

Coracias abyssinicus Bodd.; Grant, p. 437; Butler, p. 349.
Coracias abyssinus Reich. ii. p. 219 (1902).
a. ♂. Khartum, January 10th.
b, c. ♂. Polkom, March 22nd & 24th.
d–h. ♀. Lake Tinero, March 23rd & 28th, April 5th & 7th.

Some of the specimens from the Baro River have the hinder part of the crown and occiput more or less tinged with purplish, but others from the same locality agree with typical examples of *C. abyssinicus*.

93. Ceryle maxima.

Ceryle maxima (Pall.); Grant & Reid, p. 677; Reich. ii. p. 298 (1902); Butler, p. 354; Neumann, 1905, p. 190.
a. ♀. [Khartum], January.

94. Ceryle rudis.

Ceryle rudis Grant, p. 435; Reich. ii. p. 295 (1902); Butler, p. 354; Neumann, 1905, p. 190.
a–e. ♀ et ♀ imm. Khartum, January 2nd to 8th.
f, g. ♂. Moradar, February 1st.
h. ♂. Baro River, February 16th.
i–m. ♂ ♀ et ♂ imm. Elea, March 25th.

95. Corythornis cyanostigma.

Corythornis cyanostigma (Rüpp.); Grant, p. 436; Reich. ii. p. 289 (1902); Butler, p. 354.
a, b. ♂. Kaig, February 4th and March 5th.

96. Halcyon semicæruleus.

Halcyon semicæruleus (Forskål); Grant, p. 436; Reich. ii. p. 276 (1902); Butler, p. 355.
Halcyon semicæruleus semicæruleus Neumann, 1905, p. 189.
a, b. ♀. Kaig, March 4th & 6th.
c–f. ♂ ♀. Elea, March 25th.

97. Halcyon senegalensis.

Halcyon senegalensis (Linn.); Grant & Reid, p. 677; Reich. ii. p. 282 (1902).

a. ♂. Kaig, March 3rd.

b. ♂. Polkom, March 24th.

c. ♂ vix adult. Elea, March 25th.

98. Halcyon chelicuti.

Halcyon chelicutensis (Stanl.); Grant, p. 436; Butler, p. 356.

Halcyon chelicuti Reich. ii. p. 271 (1902); Neumann, 1905, p. 188.

a. ♀. Polkom, March 24th.

b–f. ♂ ♀. Elea, March 25th.

99. Bubo cinerascens.

Bubo cinerascens (Guérin); Grant, p. 438; Butler, p. 362.

Bubo maculosus cinerascens Reich. i. p. 656 (1901); Neumann, 1904, p. 373.

a. ♀. Kaig, March 6th.

b. ♀ imm. Polkom, March 23rd.

c. ♂ imm. Ibaga, March 27th.

d. ♂. Lake Tinero, April 7th.

These birds shew the grey phase of plumage. The immature specimens are rather more rufous than the adults.

100. Glaucidium perlatum.

Glaucidium perlatum (Vieill.); Grant & Reid, p. 680; Reich. i. p. 674 (1901); Butler, p. 361; Neumann, 1904, p. 375.

a. ♀. Lake Tinero, March 26th.

101. Strix flammea.

Strix flammea Linn.; Grant, p. 439; Butler, p. 360.

Strix flammea maculata Brehm; Reich. i. p. 676 (1901).

a. ♀. Elea, April 6th.

102. Circus macrurus.

Circus macrourus (Gmel.); Reich. i. p. 535 (1901); Neumann, 1904, p. 359.

Circus macrurus Grant & Reid, p. 681; Butler, p. 370.

a. ♂. Khartum, January 3rd.

103. Melierax polyzonus.

Melierax polyzonus (Rüpp.); Grant, p. 440; Butler, p. 368.

Melierax metabates Heugl.; Reich. i. p. 544 (1901); Neumann, 1904, p. 360.

a–c. ♂ ♀ et ♂ imm. Polkom, March 23rd and 24th.

d. ♀. Elea, April 6th.

104. Melierax gabar.

Melierax gabar (Daud.); Grant, p. 441; Butler, p. 369.

Micronisus gabar Reich. i. p. 565 (1901).

a, b. ♀ ad. et imm. Khartum, January 3rd & 8th.

105. Astur sphenurus.

Astur sphenurus (Rüpp.); Sharpe, Cat. Birds B. M. i. p. 112 (1874); Reich. i. p. 557 (1901); Neumann, 1904, p. 360.

a. ♂. Lake Tinero, April 5th.

106. Buteo auguralis.

Buteo auguralis Salvad.; Reich. i. p. 593 (1901); Neumann, 1904, p. 364.

a–c. ♂ ♀. Kaig, March 4th & 6th.

Two of the above-mentioned specimens were presented to the British Museum by Mr. McMillan, and are a valuable accession to the collection, which previously contained only one West-African example, from the Gold Coast, received as part of the Shelley Collection. The chestnut-brown sides of the head and neck seem to be the most distinctive character of the species.

107. Asturinula monogrammica.

Asturinula monogrammica (Temm.); Sharpe, Cat. Birds B. M. i. p. 275 (1874).

Kaupifalco monogrammicus Reich. i. p. 547 (1901).

a. ♂. Elea, April 4th.

108. Butastur rufipennis.

Butastur rufipennis (Sund.); Reich. i. p. 597 (1901); Grant, p. 442; Butler, p. 368.

a. ♀. Kaig, March 7th.

"Iris yellow; bill yellow and black."

109. Haliaëtus vocifer (Daud.); Reich. i. p. 605 (1901); Grant, p. 443; Butler, p. 366; Neumann, 1904, p. 368.

a, b. ♂ ♀. Sobat, February 3rd.

110. Falco barbarus.

Falco barbarus (Linn.); Sharpe, Cat. Birds B. M. i. p. 386 (1874); Reich. i. p. 627 (1901); Butler, p. 362.

a. ♀ imm. Khartum, January 3rd.

The specimen has the upper parts moulting into the slate-coloured plumage of the adult.

111. Cerchneis tinnunculus.

Cerchneis tinnunculus (Linn.); Reich. i. p. 641 (1901); Grant, p. 444; Neumann, 1904, p. 372.

Tinnunculus alaudarius (Gmel.); Butler, p. 365.

a–d. Khartum, January 6th to 8th.

112. Dendrocycna viduata.

Dendrocycna viduata Linn.; Grant, p. 445; Butler, p. 383.

Dendrocygna viduata Reich. i. p. 124 (1900); Neumann, 1904, p. 328.

♂ ♀. Kawa, January 28th.

113. Dafila acuta.

Anas acuta Linn.; Reich. i. p. 117 (1900).

Dafila acuta Grant, p. 445; Butler, p. 384.

a, b. ♀. Khartum, December 31st.

114. Ibis æthiopica.

Ibis æthiopica (Lath.); Reich. i. p. 321 (1901); Grant, p. 449; Butler, p. 371; Neumann, 1904, p. 327.

a. ♀ imm. Sobat, February 3rd.

115. Scopus umbretta.

Scopus umbretta (Gmel.); Reich. i. p. 353 (1901); Grant, p. 446; Neumann, 1904, p. 339; Butler, p. 377.

a, b. ♂. Polkom, March 24th & 25th.

c. ♀. Elea, March 26th.

116. Abdimia abdimii.

Abdimia abdimii (Licht.); Reich. i. p. 343 (1901); Grant, p. 446; Neumann, 1904, p. 338.

Ciconia abdimii, Butler, p. 378.

a–e. ♂ ♀. Lake Tinero, March 28th and April 2nd.

117. Anastomus lamelligerus.

Anastomus lamelligerus Temm.; Reich. i. p. 335 (1901); Grant, p. 447; Neumann, 1904, p. 338; Butler, p. 381.

a. ♂. Sobat River, February 3rd.

b–e. ♂ ♀. Baro River, February 19th.

118. Ardea goliath.

Ardea goliath Cretzschm.; Reich. i. p. 376 (1901); Grant, p. 450; Neumann, 1904, p. 339; Butler, p. 372.

a. ♀. Baro River, February 18th.

119. Ardea cinerea.

Ardea cinerea Linn.; Reich. i. p. 379 (1901); Grant, p. 450; Butler, p. 372.

a. ♂. Khartum, January 3rd.

b. ♂ imm. Baro River, February 18th.

120. Mesophoyx brachyrhyncha.

Mesophoyx brachyrhyncha (Brehm); Grant, p. 451.

Herodias brachyrhyncha Reich. i. p. 389 (1901); Butler, p. 372.

a. ♀. Elea, March 25th.

121. Garzetta garzetta.

Garzetta garzetta (Linn.); Sharpe, Cat. Birds B. M. xxvi. p. 118 (1898).

Herodias garzetta Reich. i. p. 387 (1901).

a, *b*. ♂ ♀. Khartum, January 1st & 4th.

122. Bubulcus lucidus.

Bubulcus ibis (Linn.); Reich. i. p. 381 (1901); Neumann, 1904, p. 340.

Bubulcus lucidus (Rafinesque); Grant, p. 452.

Herodias bubulcus (Aud.); Butler, p. 372.

a–c. ♂ ♀. Elea, March 25th.

d. ♂. Lake Tinero, April 4th.

123. Nycticorax nycticorax.

Nycticorax nycticorax (Linn.); Reich. i. p. 362 (1901); Grant, p. 451.

Nycticorax griseus (Linn.); Butler, p. 373.

a. ♀. Sobat River, February 3rd.

124. Œdicnemus senegalensis.

Œdicnemus senegalensis Swains.; Reich. i. p. 197 (1900); Grant, p. 457; Neumann, 1904, p. 331; Butler, p. 398.

a. ♂. Elea, March 25th.

b. ♂. Lake Tinero, March 28th.

125. Pluvianus ægyptius.

Pluvianus ægyptius (Linn.); Reich. i. p. 150 (1900); Grant, p. 457; Neumann, 1904, p. 329; Butler, p. 399.

a, b. ♂ ♀. Baro River, February 14th & 16th.

c. ♀. Kaig, March 4th.

d. ♀. Elea, March 25th.

e, f. ♂ ♀. Lake Tinero, March 28th and April 2nd.

126. Glareola pratincola.

Glareola fusca (Linn.); Reich. i. p. 144 (1900).

Glareola pratincola (Linn.); Grant, p. 458; Butler, p. 400.

a. ♀. Baro River, February 16th.

127. Phyllopezus africanus.

Actophilus africanus (Gmel.); Reich. i. p. 267 (1900); Neumann, 1904, p. 334.

Phyllopezus africanus Grant, p. 458; Butler, p. 394.

a, b. ♂ et ♂ imm. Polkom, March 21st.

c–f. ♂ ♀ et ♀ imm. Ibaga, Baro River, March 27th.

128. Himantopus himantopus.

Himantopus himantopus Linn.; Reich. i. p. 207 (1900); Grant, p. 460.

Himantopus candidus (Bonn.); Butler, p. 398.

a, b. ♂ ♀. Baro River, February 13th & 14th.

129. Limosa ægocephala.

Limosa limosa (Linn.); Reich. i. p. 213 (1900); Grant, p. 461.

Limosa ægocephala (Linn.); Butler, p. 397.

a, b. ♂. Khartum, December 31st and January 1st.

130. Lobivanellus senegallus.

Lobivanellus senegallus Linn.; Reich. i. p. 193 (1900); Grant, p. 459; Neumann, 1904, p. 331; Butler, p. 394.

a. ♂. Baro River, February 16th.

131. Hoplopterus spinosus.

Hoplopterus spinosus (Linn.); Reich. i. p. 186 (1900); Grant, p. 459; Neumann, 1904, p. 331; Butler, p. 395.

a. ♀. Khartum, January 14th.

b, c. ♂ ♀. White Nile, January 26th.

d, e. ♀. Fashoda, January 31st.

f, g. ♀. Baro River, February 13th & 16th.

132. Ægialitis hiaticola.

Charadrius hiaticula Linn.; Reich. i. p. 174 (1900).

Ægialitis hiaticola Grant, p. 460; Butler, p. 396.

a–c. ♀. Khartum, January 1st & 12th.

133. Ægialitis dubia.

Charadrius dubius Scop.; Reich. i. p. 175 (1900).

Ægialitis dubia Grant, p. 460; Butler, p. 396.

a. ♂. Khartum, January 2nd.

b. ♂. White Nile, January 21st.

c. ♀ imm. Baro River, February 15th.

134. Glottis nebularius.

Totanus littoreus (Linn.); Reich. i. p. 217 (1900).

Glottis nebularius (Gunn.); Grant, p. 462.

Totanus canescens (Gmel.); Butler, p. 397.

a. ♂. Kaig, March 7th.

135. Pavoncella pugnax.

Totanus pugnax (Linn.); Reich. i. p. 216 (1900).

Pavoncella pugnax Grant, p. 462; Butler, p. 397.

a–c. ♀. Khartum, January 1st & 12th.

136. Tringa minuta.

Tringa minuta Leisl.; Reich. i. p. 233 (1900); Grant, p. 463; Butler, p. 396.

a–h. ♂ ♀. Khartum, January 1st, 2nd, & 12th.

i. ♀. Baro River, February 16th.

137. Tringa subarquata.

Tringa subarquata (Güld.); Reich. i. p. 230 (1900); Grant, p. 463; Butler, p. 396.

a–d. ♂ ♀. Khartum, January 1st & 12th.

138. Gelochelidon anglica.

Gelochelidon nilotica (Hasselq.); Reich. i. p. 51 (1900).

Gelochelidon anglica (Mont.); Grant, p. 464.

Sterna anglica Butler, p. 382.

a. ♂. Khartum, December 30th.

139. Rhynchops flavirostris.

Rhynchops flavirostris Vieill.; Reich. i. p. 76 (1900); Grant, p. 464; Neumann, 1904, p. 326.

Rhynchops flaviventris (sic) Butler, p. 382.

a. ♂. Baro River, February 24th.

140. Turtur decipiens.

Turtur decipiens Finsch & Hartl.; Reich. i. p. 412 (1901); Grant, p. 465; Butler, p. 359.

a. ♂. Kaig, Baro River, March 4th.

b. ♀. Lake Tinero, March 28th.

141. Œna capensis.

Œna capensis (Linn.); Reich. i. p. 429 (1901); Neumann, 1904, p. 350; Grant, p. 467; Butler, p. 359.

a–c. ♂ ♀. Khartum, January 10th.

d, e. ♂ ♀. Kawa, White Nile, January 28th.

142. Vinago waalia.

Vinago waalia (Gmel.); Reich. i. p. 393 (1901); Grant & Reid, p. 695; Butler, p. 358.

Vinago waalia cinereiceps Neumann, 1904, p. 341.

a. ♀. Kaig, Baro River, March 4th.

b. ♂. Polkom, Baro River, March 24th.

c. ♂. Lake Tinero, Baro River, March 26th.

d, *e*. ♂. Ibaga, Baro River, March 27th.

The male bird described by Mr. Neumann as belonging to a new subspecies was procured at Lake Tata, on the Gelo, within a hundred miles of the Baro River; but our specimens from the same district do not differ in any way from the typical *V. waalia*. Among the examples collected by Mr. E. Degen in Abyssinia there is one agreeing more or less with the description of *V. w. cinereiceps*.

143. Numida ptilorhyncha.

Numida ptilorhyncha Licht.; Grant, p. 469; Butler, p. 388.

a, *b*. ♀. Ibaga, Baro River, March 27th.

XXXIV.—*Suggestions as to the Functions of the Entotympanic Muscle in the Common Snipe.* By W. H. Workman, M.B.O.U.

While I was snipe-shooting towards the end of last year my attention was specially drawn to the construction of the bill of the Common Snipe (*Gallinago cœlestis*); and I examined the heads of a number of specimens with a view to finding out the means by which the soft and pliable anterior part of the upper mandible is lifted.

The fact of this bird being able to raise the tip of the upper mandible seems to be well known, as Professor Newton says:—

"The flexible part commonly lies behind the nasal cavities, but in *Trochili* and *Scolopacidæ* far in front of the nostrils, so that only the anterior part of the upper mandible is movable, and motion can be effected while the mouth is closed. In some Plovers and Ibises, and probably a few other birds also, such a flexible region exists besides the usual fronto-nasal one." *

M. Hérissant, in an article entitled "Observations Anatomiques sur les Mouvements du Bec des Oiseaux," in 'Histoire

* Dict. B. p. 877, note 2.